

ABSTRACT OF THE DISCLOSURE

5 An air gun includes an air pump with a pumping piston
 mounted to reciprocate within a pump cylinder, which is
 mounted on the barrel of the gun to pivot about an axis
 transverse to the longitudinal axis of the barrel so that as
 the pump cylinder is moved back and forth around the pivot,
 the cylinder and piston reciprocate relative to each other to
 10 pump air into a high pressure housing carried by the pump
 cylinder. A discharge conduit is also provided for releasably
 connecting the high pressure housing to the breach end of a
 gun barrel when the pump is moved toward the barrel. A firing
 valve in the discharge conduit releases air from the high
 15 pressure housing into the breach end of the barrel.
 Preferably, a floating differential piston disposed to
 reciprocate in a high pressure housing divides the housing
 into a storage chamber and a high pressure chamber. A
 pressure relief valve extending through the differential
 20 piston permits compressed air to flow from the storage chamber
 to the firing chamber, and maintains a higher pressure in the
 storage chamber than in the firing chamber. The end of the
 piston in the firing chamber seals a greater cross sectional
 area than the end of the piston in the storage chamber so that
 25 a piston is forced to move into the storage chamber by an
 amount which balances the forces on the opposite end of the
 piston. The gun barrel muzzle includes at least one lateral
 opening for venting compressed air as a pellet leaves the
 muzzle end of the barrel.

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